



## SEQUENCE LISTING

RECEIVED #9  
JUL 24 2001  
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<110> Harris, Curtis C  
Nagashima, Makoto  
Government of United States as represented by the Secretary of the  
Department of Health and Human Services

<120> New Tumor Suppressor Gene P33ING2

<130> 015280-376100US

<140> US 09/513,365

<141> 2000-02-25

<150> US 60/121,891

<151> 1999-02-26

<160> 10

<170> PatentIn Ver. 2.1

<210> 1

<211> 280

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: p33ING2  
polypeptide sequence

<400> 1

Met Leu Gly Gln Gln Gln Gln Leu Tyr Ser Ser Ala Ala Leu Leu  
1 5 10 15

Thr Gly Glu Arg Ser Arg Leu Leu Thr Cys Tyr Val Gln Asp Tyr Leu  
20 25 30

Glu Cys Val Glu Ser Leu Pro His Asp Met Gln Arg Asn Val Ser Val  
35 40 45

Leu Arg Glu Leu Asp Asn Lys Tyr Gln Glu Thr Leu Lys Glu Ile Asp  
50 55 60

Asp Val Tyr Glu Lys Tyr Lys Lys Glu Asp Asp Leu Asn Gln Lys Lys  
65 70 75 80

Arg Leu Gln Gln Leu Leu Gln Arg Ala Leu Ile Asn Ser Gln Glu Leu  
85 90 95

Gly Asp Glu Lys Ile Gln Ile Val Thr Gln Met Leu Glu Leu Val Glu  
100 105 110

Asn Arg Ala Arg Gln Met Glu Leu His Ser Gln Cys Phe Gln Asp Pro  
115 120 125

Ala Glu Ser Glu Arg Ala Ser Asp Lys Ala Lys Met Asp Ser Ser Gln  
130 135 140

Pro Glu Arg Ser Ser Arg Arg Pro Arg Arg Gln Arg Thr Ser Glu Ser  
145 150 155 160



<210> 3  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Degenerate  
primer used to isolate p33ING2 nucleic acids

<400> 3  
Met Leu Gly Gln Gln Gln Gln  
1 5

<210> 4  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Degenerate  
primer used to isolate p33ING2 nucleic acid

<400> 4  
Lys Lys Asp Arg Arg Ser Arg  
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<210> 5  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: peptide 7-26  
of p33ING2 (KMP1)

<400> 5  
Gln Gln Leu Tyr Ser Ser Ala Ala Leu Leu Thr Gly Glu Arg Ser Arg  
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Leu Leu Thr Cys  
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<210> 6  
<211> 280  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: missense  
p33ING2 sequence - Arg 153 to Ser

<400> 6  
Met Leu Gly Gln Gln Gln Gln Gln Leu Tyr Ser Ser Ala Ala Leu Leu  
1 5 10 15

Thr Gly Glu Arg Ser Arg Leu Leu Thr Cys Tyr Val Gln Asp Tyr Leu  
20 25 30

Glu	Cys	Val	Glu	Ser	Leu	Pro	His	Asp	Met	Gln	Arg	Asn	Val	Ser	Val	35	40	45
Leu	Arg	Glu	Leu	Asp	Asn	Lys	Tyr	Gln	Glu	Thr	Leu	Lys	Glu	Ile	Asp	50	55	60
Asp	Val	Tyr	Glu	Lys	Tyr	Lys	Lys	Glu	Asp	Asp	Leu	Asn	Gln	Lys	Lys	65	70	75
Arg	Leu	Gln	Gln	Leu	Leu	Gln	Arg	Ala	Leu	Ile	Asn	Ser	Gln	Glu	Leu	85	90	95
Gly	Asp	Glu	Lys	Ile	Gln	Ile	Val	Thr	Gln	Met	Leu	Glu	Leu	Val	Glu	100	105	110
Asn	Arg	Ala	Arg	Gln	Met	Glu	Leu	His	Ser	Gln	Cys	Phe	Gln	Asp	Pro	115	120	125
Ala	Glu	Ser	Glu	Arg	Ala	Ser	Asp	Lys	Ala	Lys	Met	Asp	Ser	Ser	Gln	130	135	140
Pro	Glu	Arg	Ser	Ser	Arg	Arg	Pro	Ser	Arg	Gln	Arg	Thr	Ser	Glu	Ser	145	150	155
Arg	Asp	Leu	Cys	His	Met	Ala	Asn	Gly	Ile	Glu	Asp	Cys	Asp	Asp	Gln	165	170	175
Pro	Pro	Lys	Glu	Lys	Lys	Ser	Lys	Ser	Ala	Lys	Lys	Lys	Lys	Arg	Ser	180	185	190
Lys	Ala	Lys	Gln	Glu	Arg	Glu	Ala	Ser	Pro	Val	Glu	Phe	Ala	Ile	Asp	195	200	205
Pro	Asn	Glu	Pro	Thr	Tyr	Cys	Leu	Cys	Asn	Gln	Val	Ser	Tyr	Gly	Glu	210	215	220
Met	Ile	Gly	Cys	Asp	Asn	Glu	Gln	Cys	Pro	Ile	Glu	Trp	Phe	His	Phe	225	230	235
Ser	Cys	Val	Ser	Leu	Thr	Tyr	Lys	Pro	Lys	Gly	Lys	Trp	Tyr	Cys	Pro	245	250	255
Lys	Cys	Arg	Gly	Asp	Asn	Glu	Lys	Thr	Met	Asp	Lys	Ser	Thr	Glu	Lys	260	265	270
Thr	Lys	Lys	Asp	Arg	Arg	Ser	Arg									275	280	

<210> 7  
 <211> 423  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <223> p 33ING2 genomic DNA sequence (exon 1/intron)  
 GenBank Accession No. HSING2S1

<221> exon  
 <222> (1)..(239)  
 <221> intron  
 <222> (240)..(>423)

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 ccaccttccc tttctcccggt gacagtctcc ccgagcgcac cgaggggtctg ccgagcggga 360  
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<210> 8  
 <211> 279  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: p33ING1

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 Asn Val Ser Leu Met Arg Glu Ile Asp Ala Lys Tyr Gln Glu Ile Leu  
 35 40 45  
 Lys Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly  
 50 55 60  
 Ala Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg  
 65 70 75 80  
 Ser Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val  
 85 90 95  
 Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu  
 100 105 110  
 Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Ala Gly Asn Ser Gly Lys  
 115 120 125  
 Ala Gly Ala Asp Arg Pro Lys Gly Glu Ala Ala Ala Gln Ala Asp Lys  
 130 135 140

Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu  
 145 150 155 160  
 Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro  
 165 170 175  
 Lys Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala  
 180 185 190  
 Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn  
 195 200 205  
 Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile  
 210 215 220  
 Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys  
 225 230 235 240  
 Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys  
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 Arg Gly Glu Asn Glu Lys Thr Met Asp Lys Ala Leu Glu Lys Ser Lys  
 260 265 270  
 Lys Glu Arg Ala Tyr Asn Arg  
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<210> 9  
 <211> 279  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: peptide 1-17  
 and C of p33ING1 (KMP2)

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 20 25 30  
 Asn Val Ser Leu Met Arg Glu Ile Asp Ala Lys Tyr Gln Glu Ile Leu  
 35 40 45  
 Lys Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly  
 50 55 60  
 Ala Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg  
 65 70 75 80  
 Ser Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val  
 85 90 95  
 Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu  
 100 105 110

Phe	Glu	Ala	Gln	Gln	Glu	Leu	Gly	Asp	Thr	Ala	Gly	Asn	Ser	Gly	Lys	115	120	125
Ala	Gly	Ala	Asp	Arg	Pro	Lys	Gly	Glu	Ala	Ala	Ala	Gln	Ala	Asp	Lys	130	135	140
Pro	Asn	Ser	Lys	Arg	Ser	Arg	Arg	Gln	Arg	Asn	Asn	Glu	Asn	Arg	Glu	145	150	155
Asn	Ala	Ser	Ser	Asn	His	Asp	His	Asp	Asp	Gly	Ala	Ser	Gly	Thr	Pro	165	170	175
Lys	Glu	Lys	Lys	Ala	Lys	Thr	Ser	Lys	Lys	Lys	Lys	Arg	Ser	Lys	Ala	180	185	190
Lys	Ala	Glu	Arg	Glu	Ala	Ser	Pro	Ala	Asp	Leu	Pro	Ile	Asp	Pro	Asn	195	200	205
Glu	Pro	Thr	Tyr	Cys	Leu	Cys	Asn	Gln	Val	Ser	Tyr	Gly	Glu	Met	Ile	210	215	220
Gly	Cys	Asp	Asn	Asp	Glu	Cys	Pro	Ile	Glu	Trp	Phe	His	Phe	Ser	Cys	225	230	235
Val	Gly	Leu	Asn	His	Lys	Pro	Lys	Gly	Lys	Trp	Tyr	Cys	Pro	Lys	Cys	245	250	255
Arg	Gly	Glu	Asn	Glu	Lys	Thr	Met	Asp	Lys	Ala	Leu	Glu	Lys	Ser	Lys	260	265	270
Lys	Glu	Arg	Ala	Tyr	Asn	Arg										275		

<210> 10  
 <211> 974  
 <212> DNA  
 <213> Homo sapiens

<220>

<223> p33ING2 genomic DNA sequence (Exon 2/intron)  
 GenBank Accession No. HSING2S2

<221> intron

<222> (<1)..(123)

<221> exon

<222> (124)..(938)

<400> 10

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gcaaccaagt gtcttatggg gagatgatag gatgtgacaa tgaacagtgt ccaattgaat 660
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